Project Detailed Document

1) Title of group project :
Hotel Automation System

2) Team members :
Group 15 :
Shivam Patel - 201901057
Himanshu Dudhatra - 201901011
Dhaval Raj - 201901024
Bhumin Patel - 201901030
Smit Patel - 201901056
Shubham Patel - 201901100

3) Reporting TA :
Mahir- 202011002

4) Date :
24 March, 2022

5) Document Version number : 1.0

6) Tentative dates :
Start Date:28-02-2022, End Date: 13-05-2022 (Approx. 11 weeks)

7) Objective :

This project's main purpose is to develop a hotel management system for usage in hotels.The system will utilize technology optimally to automate hotel management systems.The system should be as adaptable as possible, so that it can be used in a wide range of hotels.The system should showcase a wide variety of functionalities.The user interfaces' functionality shall be conveniently accessible.The system should keep a running log of all actions, including accounting, Booking or reservation of the rooms also cancellation of the room, in real time.Using this, one can keep detailed record or info of large number of customers. At any time, the system informs the user of which rooms are available for occupancy. This speeds up the booking process significantly. As a result, the hotel may better manage its operations and save time and money by reducing paper work and labour.

8) Functionalities :

- Every new user will have to make an account on the application to use the functionalities. Users can register using his/her email address or phone number.
- Room Reservation Through mobile application. Overbookings and duplicate bookings will be avoided by managing room inventory and allocation. Room Reservation on the spot.
- Processing E payments to do online booking through the mobile application.
- Customers can see the details of the room like single bed or double bed type room or AC or Non-AC type room and the availability of room on the application.
- Guest profile- Guest profiles save contact information, stay history, and preferences so hotels can provide more personalised experience during their next stay.
- Different users have different roles in the application like guest, receptionist, manager, restaurant manager etc. Based on the role of the user different interfaces of application will be provided.
- Mobile and laptop compatible - It will be available for both.
- Email automation - this will allow us to communicate with guests and help to reduce manual work by sending personalised, customised, and automated emails to guests. We can give some functionalities on email like receive booking details, receive OTP to authenticate users.
- Security management - It is mandatory to look after storage data security. Basically third party gateways should be secured enough for transactions.
- Finance management like invoicing and cashiering - It will depend upon the size of the hotel. Small hotels will have simple invoicing functionalities,while big hotels can have some extra third party gateways.
- Guests can order food from the room using the application And similar payment gateways will be provided.
- At reception, the receptionist can generate and print the entire bill of the guest.
- Frequent guests will get some point and using that point they can get some discount on bill or in online booking.
- The application can generate statistical reports about the business.
- The manager can change the room tariff depending upon the events or occupancy rate. Application will display the average occupancy rate for a given month so that the manager can revise the room tariff either upward or downward by a certain percentage.
- There will be a helpline number in a highlighted portion ,By that customers can also access the functionalities of the hotel.
- Whenever checkout dates will be hit automatic messages for feedback will be generated to the customers number and email.

9) Project Deliverables :

a) Milestones :
Requirements Gathering,
Software Design,
Software Development,
Test and Integration,
Deployment,
Operationalization and Maintenance

b) List of final deliverables :

i. Complete documentation :
Software requirement specification (as PDF)
Trial App data content
Demo Video to demonstrate usage

ii. Report for audit :

iii. User guide :

- **User Guide For Customers :**

  I. **Registration/Login :**
  To register on the app the customer will need to provide an email address. After that the email provided by the customer will receive OTP for authentication. Then the Customer will be redirected to set up a password. The customer can then login using Email address and password.

  II. **Exploring Room Options :**
  After the login the list of room options will be displayed along with filters.The customer can apply various filters and can find the desired room option.

  III. **Room Booking :**
  Once the customer has found the desired room the customer will then need to provide the number of rooms, arrival time, number of persons, expected days of stay, mode of payment.The customer will have to provide the confirmation about the room booking then the customer will be redirected to the payment system.

IV. **Payment Procedure :**
   The customer can pay through different payment methods such as cash on arrival, third party payment gateways. After the payment through gateway succeeds the customer will receive the room details and check in details through email which was provided earlier.

- **User Guide For Manager :**

  I. **Registration/Login :**
     The manager will have a special ID and password for login so that no other unauthorised person can access.

  II. **View/Update Room details :**
     After the login the manager can access the room details for all the available rooms and on the same interface he can edit/update/add all the room details such as room type, room rates etc.

  III. **View/Update Staff details :**
     The manager can access all the staff details and can edit/update the details of staff such as salary of a particular employee,Working hours, shift timings.

- **User Guide For Receptionist :**

  I. **Registration/Login :**
     The receptionist will have a special ID and password which will be given by the manager for login so that no other unauthorised person can access.

  II. **Allocating customer a Room :**
     The receptionist can book a room as asked by the customer on the desk and then the receptionist will collect cash from the customer and update the customer-room details in the database.

10) Estimated total time :
   Requirement gathering - 4 weeks (12 hours)
   Design - 3 weeks (12 hours)
   Coding - 2 weeks (10 hours)
   Development period - 1 week (10 hours)
   Testing - 1 weeks (8 hours)
   Maintain - 1 weeks (5 hours)

11) H/W and S/W requirements :

      H/W Requirement :
      PC/Laptop
      Android/iOS smartphone
      Internet or LAN connection(required)
      Memory (RAM): Minimum 512 MB
      Processor: Minimum 1 GHz; Recommended 2GHz or more
      Hard Drive: Minimum 1 GB; Recommended 2 GB or more

      S/W Requirement :
      Operating systems: Windows, Android, iOS

12) Technology / Architecture :
      Github
      Flutter
      Database modelling tool - Postgre/SQL
      Programming languages
      Software Development Methodology - agile
      Third Party payment gateways
      Server/Data centre

13) Standard to be followed throughout the project :

      A standard is a technical publication created to ensure the reliability of the materials, products, methods, and/or services. They establish the technical requirements, specifications, guidelines, characteristics, and/or procedures designed.Standards are the minimally accepted professional practice and/or quality that must be observed.

      All software development projects, including maintenance projects, must follow these standards. Objectives for application development include:
Clear definition of purpose, Simplicity of use Ruggedness (difficult to misuse, kind to errors encountered), Delivered on time and when needed, Reliability, Efficiency (fast enough for the purpose it was created), Minimum development cost, Conform to standards, Clear, accurate and precise user documentation Clear, accurate and precise technical documentation.

      The production, development, and test environments must all be kept separate. This will ensure that the production system's security is rigorously maintained, while the development and test environments can maximise productivity with fewer security constraints.

Throughout the project, special attention must be paid to capturing and implementing security and privacy requirements on an ongoing basis. This must be reflected in the post-implementation review.